

CLAIM AMENDMENTS

Thus listing replaces all prior listings.

1. (CURRENTLY AMENDED) A cultured skin device comprising

cultured dermal cells directly attached to ~~[[on]]~~ a biocompatible non-perforated reticulated acellular matrix,

the matrix prepared from a matrix-forming collagen-containing fluid that is cast, frozen, and dehydrated,

~~the dermal cells providing a cellular lamination layer within a shorter time period than is possible using a perforated matrix for~~ with cultured epidermal cells directly inoculated and directly attached thereon which establishes a basement membrane between the epidermal cells and the dermal cells.

2. (PREVIOUSLY PRESENTED) The device of claim 1 wherein the epidermal cells are selected from the group consisting of keratinocytes, melanocytes, and combinations thereof.

3. (PREVIOUSLY PRESENTED) The device of claim 1 wherein the dermal cells are selected from the group consisting of fibroblasts, endothelial cells, and combinations thereof.

4. (PREVIOUSLY PRESENTED) The device of claim 1 for therapy in a patient with a burn, a burn scar, a chronic skin ulcer, a congenital skin lesion, and combinations thereof.

5. CANCELED

6. (ORIGINAL) The device of claim 1 wherein the matrix consists essentially of collagen.

7. (PREVIOUSLY PRESENTED) The device of claim 1 wherein the cells are selected from the group consisting of autologous, allogenic, and combinations thereof.

8. CANCELED

9. (ORIGINAL) The device of claim 1 capable of engraftment to provide at least one characteristic selected from the group consisting of an epidermal barrier, basement membrane, angiogenesis, and pigmentation.

10. (CURRENTLY AMENDED) A method of producing a cultured skin device, the method comprising

inoculating a biocompatible non-perforated reticulated acellular matrix, the matrix prepared from a matrix-forming collagen-containing fluid that is cast, frozen, and dehydrated, the matrix inoculated with cultured dermal and epidermal cells, the dermal cells directly attached to the matrix, and

incubating said the inoculated matrix, under conditions sufficient to form a cultured skin device within a shorter time period than is possible using a perforated matrix, with the dermal cells providing a cellular lamination layer for the epidermal cells wherein a basement membrane is established between the epidermal cells directly inoculated on and directly attached to the dermal cells.

11. (ORIGINAL) The method of claim 10 wherein conditions comprise incubating in a medium containing a component selected from the group consisting of insulin, at least one essential fatty acid, vitamin C, and combinations thereof.

12. (CANCELED)

13. (ORIGINAL) The method of claim 10 wherein the dermal cells are inoculated prior to inoculating the epidermal cells.

14. CANCELED

15. (ORIGINAL) The method of claim 10 wherein the matrix consists essentially of collagen.

16-17. (CANCELED)

18. (CURRENTLY AMENDED) A method of producing a cultured skin device, the method comprising isolating at least a first dermal cell type from skin, culturing the isolated cells, and inoculating the cultured cells to a biocompatible non-perforated reticulated acellular matrix, the matrix prepared from a matrix-forming collagen-containing fluid that is cast, frozen, and dehydrated, the inoculation by a method selected from the group consisting of submerged inoculation and lifted inoculation, and

incubating the inoculated matrix under conditions to form at least one dermal cellular lamination layer population wherein a basement membrane is established between the dermal cells and epidermal cells directly inoculated and attached thereon within a shorter time period than is possible using a perforated matrix.

19-20. CANCELED

21. (ORIGINAL) The method of claim 18 wherein the cells are from a recipient of the skin device.

22. (PREVIOUSLY PRESENTED) The method of claim 18 wherein the cells are selected from the group consisting of allogeneic and autologous.

23. (ORIGINAL) The method of claim 18 wherein the cultured skin device is chimeric in genotype.

24. (CURRENTLY AMENDED) A method for producing a permanent cultured skin device for a burn patient, the method comprising

isolating at least one dermal cell type and at least one epidermal cell type from an uninjured area of skin from a burn patient,

separately culturing the isolated dermal and epidermal cells,

inoculating a biocompatible ~~non-perforated~~ reticulated acellular matrix, the matrix prepared from a matrix-forming collagen-containing fluid that is cast, frozen, and dehydrated, the matrix inoculated with the cultured dermal and epidermal cells, the dermal cells directly attached to the matrix, and

incubating the inoculated matrix under conditions to form a cultured skin device having a dermal cellular lamination layer ~~to support~~ supporting ~~[[an]]~~ epidermal cells cellular-layer-deposited directly inoculated thereon wherein a basement membrane is established between the dermal cells and epidermal cells, within a shorter time period than is possible using a perforated matrix after inoculating the cells, and

providing the device to the patient.

25. (PREVIOUSLY PRESENTED) The method of claim 24 wherein the dermal cells are selected from the group consisting of fibroblasts, endothelial cells, and combinations thereof, and the epidermal cells are selected from the group consisting of keratinocytes, melanocytes, and combinations thereof.

26. (ORIGINAL) The method of claim 24 wherein the cultured skin device restores an epidermal barrier function.

27. (ORIGINAL) The method of claim 24 wherein the cultured skin device is vascularized within two to seven days of surgical application.

28. (CANCELED)

29. (CURRENTLY AMENDED) A method of producing a cultured skin device, the method comprising

inoculating a biocompatible ~~non-perforated~~ reticulated acellular matrix, the matrix prepared from a matrix-forming collagen-containing fluid that is cast, frozen, and dehydrated, the matrix inoculated with cultured dermal cells, the dermal cells directly attached to the matrix,

incubating the inoculated matrix under conditions to form a cellular lamination layer of dermal cells,

inoculating cultured epidermal cells directly on the dermal cell lamination layer wherein a basement membrane is established between the epidermal cells and the dermal cells, and

incubating under conditions sufficient to form a cultured skin device ~~within a shorter time period than is possible using a perforated matrix~~.

30-31. CANCELED

32. (CURRENTLY AMENDED) A method of inoculating a matrix with a cell suspension, the method comprising

providing ~~an engineered~~ a biocompatible ~~non-perforated~~ reticulated acellular matrix, the matrix prepared from a matrix-forming collagen-containing fluid that is cast, frozen, and dehydrated, the matrix provided ~~comprised of collagen~~ overlying an absorbent material, the material saturated with a cell culture medium,

thereafter providing dermal cells suspended in a volume of culture medium to a top surface of the matrix under conditions sufficient to draw the medium through the absorbent material and deposit the dermal cells on the matrix to directly attach to the matrix ~~form~~ forming a cellular lamination layer wherein a basement membrane is established between epidermal cells directly deposited thereon ~~within a shorter time period than is possible using a perforated matrix~~.

33. (PREVIOUSLY PRESENTED) The method of claim 32 wherein the undersurface of the reticulated acellular matrix is in contact with a substantially non-adherent, non-cytotoxic surface.

34. (CURRENTLY AMENDED) A method for producing a permanent cultured skin device for a patient, the method comprising

isolating at least one dermal cell type and at least one epidermal cell type from an uninjured area of skin from the patient,

separately culturing the isolated dermal and epidermal cells,

inoculating a biocompatible ~~non-perforated~~ reticulated acellular matrix, the matrix prepared from a matrix-forming collagen-containing fluid that is cast, frozen, and dehydrated, the matrix inoculated with

the cultured dermal and epidermal cells, the dermal cells directly attached to the matrix and forming a cellular lamination layer, and

incubating the inoculated matrix under conditions to form a cultured skin device having [[a]] the cellular lamination layer on the biocompatible reticulated acellular matrix wherein a basement membrane is established between the epidermal cells directly inoculated thereon and the dermal cells within a shorter time period than is possible using a perforated matrix after inoculating the cells, and providing the device to the patient.

35. (PREVIOUSLY PRESENTED) The method of claim 34 wherein the patient is burned.

36. (PREVIOUSLY PRESENTED) The method of claim 34 wherein the patient has a chronic wound.

37. (PREVIOUSLY PRESENTED) The method of claim 34 wherein the patient is a candidate for an elective surgery of the skin.